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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,820	10/19/2001	Patrice Onno	1807.1864	7592

5514 7590 03/20/2006

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER	
ROSARIO, DENNIS	

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/981,820	ONNO, PATRICE	
	Examiner	Art Unit	
	Dennis Rosario	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *RCE 2/27/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10/19/2001 & 2/27/2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 27, 2006 has been entered.

Response to Amendment

2. The amendment was received on 2/27/2006. Claims 1-41 are pending.

Drawings

3. The amendment, filed on 2/27/2005, of figure 5 has been acknowledged and entered.

Response to Arguments

4. Applicant's arguments on page 18, last paragraph, filed 2/27/2006 have been fully considered but they are not persuasive and states:

> "Nothing in Dekel et al. would teach or suggest deciding, at a decoding side, whether or not to modify a determined subset of samples..."

However, the examiner respectfully disagrees since Dekel et al. does disclose deciding, at a decoding side (as described in sections 4.2.1 thru 4.2.3.2 starting in col. 13, line 20 to col. 15, line 14), whether or not to modify (or "split" in col. 14, line 17) a determined subset of samples (or "group" in col. 14, line 17 based on a comparison using "b_Group<b" in col. 14, line 14).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 3,6-8 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Siva et al. (cited IEEE article).

Regarding claim 3 Silva et al. discloses a method of processing a coded digital signal including a set of samples obtained by coding a set of original samples representing physical quantities, and including

a) a set of information (corresponding to the whole square, labeled 1,2,3,4) relating to a size w,h, of the set of original samples and its resolution res, comprising the steps of:

b) locating a subset of original samples (fig. 1, shows a big block "a" in the top left corner) given:

b1) size zulx,zuly,zh,zw and

b2) resolution zres in the

set of original samples (corresponding to the whole square, labeled 1,2,3,4)

c) according to:

c1) the set of information on relating to the size w,h and

c2) the resolution res of this set (corresponding to the whole square, labeled 1,2,3,4) ;

d) determining (via the section "WAVELET FILTER BANKS" on page 342), amongst coefficients of a low-frequency sub-band LL_0 of a last decomposition level obtained by decomposition into frequency sub-bands of the set of original samples,

d1) a number of coefficients per dimension (fig. 1, shows 4 "a" coefficients in the vertical dimension that corresponds to the dimensions of the big block "a") of the signal which correspond to the located subset; and

e) deciding whether or not to modify the size (or merge in the section "Detailed description of the merge algorithm" on page 343) of the located subset according to the determined number of low-frequency sub-band coefficients before restoring the located subset (because the merge algorithm will operation will next operate on a horizontal direction such as a block of "c"s as shown in fig. 1 so that a restored image as shown in fig. 2 results.).

Claims 6 and 7 are rejected the same as claim 3, step e. Thus, argument similar to that presented above for claim 3, step e) is equally applicable to claims 6 and 7.

Regarding claim 8, Silva et al. discloses the method according to Claim 7, in which by representing, in a space of dimensions corresponding to the dimensions of the digital signal,

a) a position of the coefficients of the low-frequency sub-band of the last decomposition level (as shown in fig. 1 using quadrants 1-4) and

b) a position of the subset of original samples (as shown in fig. 1 using quadrants 1-4) delimited by a boundary (fig. 1 shows the big block "a" that shows a bold perimeter), the increase (or merging) in size of the subset consists of:

b1) moving (or merging) the boundary so as to add to the subset at least one coefficient (using "adjacencies" on page 343, right column, line 2) of the low-frequency sub-band per dimension (via the "horizontal or vertical" on page 343, right column, line 2) of the digital signal,

c) the at least one added coefficient being situated close to the boundary before the movement thereof.

Claim 13 is rejected the same as claim 8. Thus, argument similar to that presented above for claim 8 is equally applicable to claim 13.

7. Claims 3,6,7,9 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Chiang et al. (US Patent 6,084,908 A).

Regarding claim 3, Chian et al. discloses a method of processing a coded digital signal including a set of samples obtained by coding a set of original samples representing physical quantities, and including

a) a set of information (fig. 2, num. 253) relating to a size w,h, of the set of original samples and its resolution res, comprising the steps of:

b) locating a subset (or any one block of figures 9 and 15) of original samples (via fig. 2, num. 250) given:

b1) size zulx,zuly,zh,zw and

b2) resolution zres in the set of original samples (from fig. 2, num. 253)

c) according to:

c1) the set of information on relating to the size w,h and

c2) the resolution res of this set (from fig. 2, num. 253) ;

d) determining (using fig. 10), amongst coefficients of a low-frequency sub-band LL_0 of a last decomposition level obtained by decomposition into frequency sub-bands of the set of original samples,

d1) a number of coefficients ("8,16,32,64,128,256" in col. 5, lines 53,54) per dimension (of each "block-size" in col. 5, line 53) of the signal which correspond to the located subset; and

e) deciding whether or not to modify the size (via fig. 5,num. 540 that merges or splits the size of the block) of the located subset according to the determined number of low-frequency sub-band coefficients before restoring the located subset (upon the output of fig. 5,num. 575).

Claims 6,7and 9 are rejected the same as claim 3, step e). Thus, argument similar to that presented above for claim 3, step e) is equally applicable to claims 6,7 and 9.

Regarding claim 10, Chiang et al. discloses the method according to claim 9, in which, by representing, in a space with dimensions corresponding to the dimensions of the digital signal,

a) a position of the coefficients (fig. 5,num. 540 corresponds to a position or situation that the coefficients are in) of the frequency sub-bands obtained by decomposition of the set of original samples and

b) a position of the subset of original samples (fig. 5,num. 540 corresponds to a position or situation that the coefficients are in) delimited by a boundary (as shown by the plurality of blocks in figures 9 and 15), the reduction in size (via a split as shown in fig. 5, num. 540) of the subset consists of:

b1) moving (or splitting) the boundary so as to remove part of the subset and all the frequency sub-band coefficients situated in the part of the substrate (Fig. 9 shows a big block in the top left corner that could be split as shown by any of the other adjacent big block blocks, using fig. 5, num. 540, that have been split into smaller blocks where any one of the smaller blocks are removed from the other part of the subset and all frequency components situated in the part of the substrate since the smaller block has split from the larger big block.).

8. Claims 3-7,11,12,14-18,20-32 and 34-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Kolesnik et al. (US Patent 6,249,614 B1).

Regarding claims 3 and 20, Kolesnik et al. discloses a method of processing a coded digital signal including a set of samples obtained by coding a set of original samples representing physical quantities, and including a set of information relating to a size w,h, of the set of original samples and its resolution res, comprising the steps of:

a) means for(fig. 8, num. 830) locating a subset of original samples (or "locate... sub-matrices" in col. 9, lines 41,42 as shown in figure 4 labels QUANTIZED SUBMATRIX, ZERO SUBMATRIX (shown two times)) given:

a1) size zulx,zuly,zh,zw (as shown by the size of the image of fig. 2A) and

a2) resolution zres (as shown by the size of the image of fig. 2A) in the set of original samples (fig. 2A)

b) according to:

b1) the set of information on relating to the size w,h (as shown by the size of the image of fig. 2A) and

b2) the resolution res of this set (as shown by the size of the image of fig. 2A);

c) means for (fig. 9, num. 920) determining, amongst coefficients of a low-frequency sub-band LL_0 of a last decomposition level obtained by decomposition into frequency sub-bands of the set of original samples (as done in figures 2A thru 2D),

c1) a number of coefficients (or "number of...coefficients" in col. 11, lines 12,13) per dimension (via "height or width" in col. 12, line 17) of the signal which correspond to the located subset; and

d) means for (fig. 9,num. 940) deciding whether or not to modify the size of the located subset (or divide a size as shown by the outputs of fig. 9, num. 940) according to the determined number of low-frequency sub-band coefficients (as determined in fig. 9, num. 920) before restoring the located subset (as is done in fig. 13,num. 1370)

e) means for restoring (fig. 9,num. 150) the located subset. said means for deciding being adapted to make a decision with regard to a modification of the size of the located subset before said means for restoring restore the located subset.

Regarding claim 4, Kolesnik et al. discloses the method according to claim 3, in which said decision step includes taking into account at least one predetermined criterion (fig. 9, num. 930) representing a required quality level for the restoration of the subset of original samples of the digital signal.

Regarding claim 5, Kolesnik et al. discloses a method according to claim 3, in which said decision step includes taking into account at least one predetermined criterion representing a compromise between a required quality level (or the amount of processing as shown in the horizontal axis of fig. 3A) for the restoration of the subset of original samples and a speed (or time as shown in the vertical axis of fig. 3A) of processing for restoring the subset of original samples.

Claims 6 and 9 are rejected the same as claim 3, step d. Thus, argument similar to that presented above for claim 3, step d is equally applicable to claims 6 and 9.

Regarding claim 7, Kolesnik et al. discloses the method according to claim 6, in which the modification lies in an increase in the size (by "collect[ing]" in col. 14, line 44 other "sub-matrices" in col. 14, line 44 as shown in fig. 4 that shows a plurality of sub-matrices that can be collect to form a quantized coefficient matrix.) of the located subset of original samples.

Regarding claim 11, Kolesnik et al. discloses the method according to claim 3, in which said decision step results in a preservation of the size the size of the located subset of original samples (figure 10,num. 1030 determines a size of the sub-matrix as done in fig. 9,num. 920 for later processing in fig. 9, num. 930).

Regarding claim 12, Kolesnik et al. discloses the method according to claim 3, further comprising:

a) the step of increasing the size of the located subset of original samples (by "collect[ing]" in col. 14, line 44 other "sub-matrices" in col. 14, line 44 as shown in fig. 4 that shows a plurality of sub-matrices that can be collect to form a quantized coefficient matrix.) which does not change the number of coefficients of the low-frequency sub-band corresponding to the subset (since the collecting operation corresponds "ALL COEFFICIENT MATRICES COLLECTED" in fig. 13, num. 1365; thus all of the determined number of coefficients are collected).

Claim 14 is rejected the same as claim 3. Thus, argument similar to that presented above for claim 3 is equally applicable to claim 14 except for the additional limitation as disclosed in Kolesnik et al. of:

a) the set of original samples of the digital signal is separated into several zones (as shown in fig. 4, labels: ZERO SUBMATRIX (shown twice) and a QUANTIZED SUBMATRIX).

Regarding claim 15, Kolesnik et al. discloses the method according to claim 3, in which the coded digital signal includes blocks of samples (as shown in the middle 4 blocks labeled: EXEMPLARY QUANTIZED COEFFICENT MATRICES of fig. 4) which have been coded independently (as shown in the bottom four block of fig. 4, labeled: EXEMPLARY CODED QUANTIZED COEFFICIENT MATRICES where each matrices is coded as either a SPARSE MATRIX or ZERO MATRIX or DENSE MATRIX).

Claim 16 is rejected the same as claim 3. Thus, argument similar to that presented above for claim 3 is equally applicable to claim 16 except for the additional limitation as disclosed in Kolesnik et al. of said decoding method comprises the steps of:

a) extracting the samples from the coded digital signal (fig. 13, num. 1305) corresponding to the located subset of the original samples having a size which has possibly been modified;

b) entropic decoding (fig. 13, num. 1325) of these samples;

c) dequantization (fig. 13, num. 1355) of the previously decoded samples;

d) reverse transformation (fig. 13, num. 1365) of the decomposition into frequency sub-bands on the previously dequantized samples; and

e) restoration (fig. 13, num. 1370) of the located subset of samples.

Claim 17 is rejected the same as claim 16, step a. Thus, argument similar to that presented above for claim16, step a is equally applicable to claim 17.

Regarding claim 18, Kolesnik et al. discloses the method according to claim 16, in which the digital signal is an image signal, the samples of the image being arranged to constitute the rows and columns (via a matrix array as shown in fig. 2C that shows columns (HH,HL), (LH,LL) and rows (HH, LH), (HL,LL)) of the image.

Claims 21-29 are rejected the same as claims 4-15,respectively. Thus, argument similar to that presented above for claims 4-15 is equally applicable to claims 21-29, respectively.

Claims 30 is rejected the same as claims 3 and 16. Thus, argument similar to that presented above for claims 3 and 16 is equally applicable to claim 30.

Claims 31 and 32 are rejected the same as claims 17 and 18. Thus, argument similar to that presented above for claims 17 and 18 is equally applicable to claims 31 and 32, respectively.

Regarding claim 34, Kolesnik et al. discloses the device according to claim 20, wherein said means for locating, said means for determining, and said means for deciding are incorporated in:

a) a microprocessor (fig. 14, num. 1405),

b) a read only memory containing a program for processing the coded digital signal (fig. 14,num. 1410), and

c) a random access memory (fig. 14, num. 1450) containing registers adapted to record variables modified during the execution of said program.

Claims 35-41 are rejected the same as claim 34. Thus, argument similar to that presented above for claim 34 is equally applicable to claims 35-41.

9. Claims 1,2,19 and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Dekel et al. (US Patent 6,314,452 B1).

Regarding claims 1 and 19, Dekel et al. discloses a method of processing a coded digital signal including a set of different types obtained by coding a set of original samples representing physical quantities, and including a set of information (during preprocessing of an image in fig. 2, num. 202) representing original samples and parameters used during the coding, said method including the steps of:

a) means for (fig. 2,num. 203) determining a subset of samples (or region of interest in fig. 2,num. 203) corresponding to a selected part of the original digital signal using the set of information;

b) means for ("loop" in col. 14, line 10) obtaining a number of samples ("4 X 4 coefficients" in col. 14, line 10) of at least one predetermined type ("Type 16" in col. 16, line 13) and which are contained in the determined subset of samples; and

c) means for (via a comparison based on "b_Group<b" in col. 14, line 14) deciding, at a decoding side (as described in sections 4.2.1 thru 4.2.3.2 starting in col. 13, line 20 to col. 15, line 14), whether or not to modify (or "split" in col. 14, line 17) a determined subset of samples (or "group" in col. 14, line 17 based on a comparison using "b_Group<b" in col. 14, line 14) according to the obtained number of samples of the at least one predetermined type, before restoring the selected part of the original signal

d) means for (fig. 2,num. 205) restoring the selected part of the original signal, said means of deciding being adapted to make a decision with regard to a modification of the determined subset of samples before said means of restoring restore the selected part of the original signal (since the selected part of the image must be decoded, which includes the claimed modification, first (or the invention will not work) then the selected part is restored using fig. 2,num. 205 after decoding).

Regarding claim 2, Dekel et al. discloses the method according to claim 1, which said determining, obtaining, and deciding steps are effected on reception of a request (fig. 8, num. 802: DECODE ROI REQUEST STREAM is a step where a server receives a request which causes said determining, obtaining, and deciding steps.) to obtain the part of the coded digital signal.

Regarding claim 33, Dekel et al. discloses the device according to claim 19, wherein said means for determining, said means for obtaining, and said means for deciding, are incorporated in:

a) a microprocessor ("microprocessor" in col. 4, line 5),

b) a read only memory ("cache" in col. 4, line 6) containing a program for processing the coded digital signal, and

c) a random access memory ("disk" in col. 4, line 8) containing registers adapted to record variables modified during the execution of said program.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Trenary et al. (US Patent 6,678,423 B1) is pertinent as teaching compression with shifting and merging blocks.

Kump (US Patent 6,704,440 B1) is pertinent as teaching a method of padding in the horizontal and vertical directions as shown in fig. 12.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario whose telephone number is (571) 272-7397. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DR

Dennis Rosario
Division 2624

BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600